Short term enhancement of nutrients availability in *Zea mays* L. Cultivation on an acid soil using compost and clinoptilolite zeolite

ABSTRACT

To avoid environmental pollution due to excessive use of inorganic fertilizers, it is essential to increase the availability of nutrients using environmentally friendly resources, such as composts and clinoptilolite zeolite, in soil fertility management. In this study, an attempt was made to use different rates of inorganic fertilizers, compost, and clinoptilolite zeolite to correct the ongoing excessive use of inorganic fertilizers. A pot study using maize (*Zea mays* L.) as a test crop was carried out to determine the effects of amending inorganic fertilizers with compost and clinoptilolite zeolite on: (i) selected soil chemical properties, and (ii) N, P, and K uptake and use efficiency in maize cultivation. The pot study was conducted for 45 days (tasseling stage of maize). Amending inorganic fertilizers with compost and clinoptilolite zeolite increased soil total N, exchangeable Ca, Mg, K, and available P. Furthermore, P and K uptake and use efficiency of maize were significantly improved upon amending inorganic fertilizers with compost and clinoptilolite zeolite. Soil chemical properties and productivity of maize on acid soils can be improved through co-application of compost and clinoptilolite zeolite. However, field application of the authors' findings is being evaluated in an on-going field experiment.

Keyword: Zea mays L. Cultivation; Clinoptilolite zeolite; Composts